In the specification:

Please amend the paragraph beginning at page **2**, line **5** as follows:

This application claims priority from co-pending U.S. Patent Application No. 09/972,675, filed October 5, 2001, and from U.S. Provisional Patent Application 60/238,354, filed October 6, 2000~~2001~~, which ~~is~~are incorporated herein by reference.

Please replace the paragraph beginning at page 13, line 18, with the following amended paragraph:

FIGURE 2 is an exemplary flow diagram 200 for conducting a robot competition utilizing the arena 100 of FIGURE 1. While the flow diagram 200 is general in nature, given that tens or hundreds of robots may be competing in a single robot competition, event flow, which includes safely and timely moving robots onto and off-of the field 102, is important for organizers, contestants, and spectators of the robot competition. By improving flow of a robot competition, more events may be conducted and more robots can compete, which ultimately increases spectator interest and reduces expensive schedule time if filming crew are present. A comparison between traditional robot competitions and robot competitions utilizing the control system according to the principles of the present invention [[are]] is described with regard to FIGURE 2.

Please replace the paragraph beginning at page 17, line 3, with the following amended paragraph:

Further at step 208, a pre-competition checkout is performed, typically by an organizer asking, "Are the [[robot]] robots ready?" and "Are the contestants ready?" As robot competitions typically have a specific starting area for the robots prior to the start of a match, time is lost when contestants test the robots 116 and move out of the areas. The robots 116 must be moved back within the areas manually or remotely, which may be dangerous to anyone on the field 102. In the case of using commercial radio controllers, determining if the robots 116 are ready requires testing the control system by moving the robots 116, robot arms and/or weapons, which may be dangerous to anyone of the field 102. Clearing the field 102 first causes delay. Since radio equipment remains on, as the radios cannot be turned off, the contestants are confident that their equipment is ready. In the case of using custom control equipment, determining if the robots 116 are ready requires testing the control system and moving the robots

116, robot arms and/or weapons, which, again, is dangerous to anyone on the field. Again, clearing the field 102 first causes delay. Once the system is tested, the operators system is powered off by the competition coordinators to prevent contestants from moving prior to the start of the match. Because the system is powered off, the coordinators and contestants cannot be certain that the system will come back on properly and timely. Additionally, the robot radios 119 remain listening to the frequency channels and are susceptible to noise and adjacent channel reception as no data rejection exists in the system. With regard to the instant control system, determining if the robots are ready requires checking for communication between the operator interfaces 110 and the robot controllers 118. The communication check may be performed without verbal communication or hand signals, as performed in the past. Since the radios 115 and 119 remain on with robot movement disabled, the contestants are confident that the equipment is ready. Furthermore, the robots 116 remain in place as a control system check by moving the robots 116 and/or the components on the robots is unnecessary, thereby providing additional safety to anyone on the field 102.

Please replace the paragraph beginning at page 23, line 20, with the following amended paragraph:

In operation, the operator radio is utilized to ~~communication~~ <u>communicate</u> information between the operator interface 114a and the robot controller 118a. The radio processor 330 of the operator radio 115a may be electronically programmable or selectable by the processor 316 of the operator interface 114a to support scanning. In one embodiment, a low power (e.g., less than approximately 0.25 watts) at a frequency band of approximately 900 MHz. The low power is used to minimize transmission distance to less than approximately 500 feet (i.e., short range communication), and to reduce the ability for other transmitters to cause interference onto other frequency channels. An RS-422 data link as understood in the art may be used between the radio modem 328 and the radio controller 330. Alternatively, a different or non-standard data link may be utilized.

Please replace the paragraph beginning at page 25, line 3, with the following amended paragraph:

In operation, the radio controller 118 receives the downlink data from the robot radio 119a. <u>A</u> [[Team]] <u>team</u> number may be used to synchronize the radio controller 118a to the

frequency channel of the operator interface 114a by scanning for a team number match. The team number may additionally be used to reject data received from the wrong (i.e., non-corresponding) operator interface 114a on the same or adjacent channel. As is understood in the art, a signal communicated on an adjacent channel may often be received and interpreted as being on the proper channel but having lower power. The mode may be used to define the current control state of the radio controller 118a to enable or disable robot control outputs from the output processor 350 to allow or prohibit movement of the robot 116a. In one embodiment, the master processor 342 may receive and interpret the mode and command the output processor to enable or disable output drivers of the output processor 350. Additionally, the mode may designate the robot controller 118 to operate the robot 116a in an autonomous mode (i.e., non-contestant driven).

Please replace the paragraph beginning at page 26, line 1, with the following amended paragraph:

The uplink data, including sensor feedback and control system data, may be communicated in data packets and contain robot sensor data and looped-back pilot control data. The system data may include a team number and a frequency channel number. By communicating the uplink data to the operator interface, data discrimination may occur and the contestant may obtain positional and status data of the robot 116a before and during a match of the robot competition.

Please replace the paragraph beginning at page 31, line 5, with the following amended paragraph:

At step 730, data continues to be communicated from the operator interface 114a to the operator radio 115a. The data may include the pilot controls and control system data, and may be communicated from the operator radio 115a to the robot radio 119a. The robot radio 119a communicates the data to the robot controller 118a at step 734. The data is received at step 736 by the master processor 342, and a verification process is performed to determine whether the correct team number and frequency channel were received at step 738. The team number is deemed to be correct if the team number received from the operator interface 114a matches the team number of the robot controller 118a. The frequency channel number is deemed to be correct if the frequency channel number received from the operator interface 114a matches the

frequency channel [[that]] on which the robot radio 119a resides. If the team number is not correct, then the data is discarded and the robot controller may wait for data again at step 728.

Please replace the paragraph beginning at page 34, line 1, with the following amended paragraph:

At step 838, the robot controller 118a communicates feedback and control system data via the tether connection to the operator interface 114a. [[at]] At step 840, the operator interface 114a waits until the correct team number and frequency channel is received from the robot controller 118a. The frequency channel is displayed on the display 320 of the operator interface 114a or external display at step 842. The operator interface 114a begins normal operation at step 844. It should be understood that startup of the control system using the tether may be performed in a different manner than shown in FIGURE 8, but that the functionality may achieve similar results.

Please replace the paragraph beginning at page 34, line 8, with the following amended paragraph:

FIGURE 9 is an exemplary interaction diagram of the control system of FIGURE 4 showing a flow of operations for conducting normal operation of the control system. At step(s) [[902a]] 702a and [[902b]] 702b, normal operation of the operator interface 114a and robot controller 118a commences. As shown the robot controller 118a has been expanded to include the three processors, including the master processor 342, user processor 346, and output processor 350. It should be understood that the robot controller 118a could include one processor to perform the functions of the three processors, but separating the functions onto the different processor reduces the load for each processor. Alternatively, rather than using a processor for the output processor 350, for example, a digital logic circuit or other device may be utilized for performing the functions of the output processor 350.